



DATE:
April 2006

PROJECT NUMBER:
129684

**BROWN AND
CALDWELL**
Carson City, Nevada

Atlantic Richfield
Company

Figure 2-13

Well B/W-9D Construction Details

Project Name: Yerington Groundwater InvestigationWell Number: B/W-9Soil Boring ☐Monitoring Well ☒

Project Number:

121243.021Sheet 1 of 13

Boring Location: North of mine tailings, east of Sunset Hills Drive		Elevation: 4351.3 feet amsl		East: 323810.1 North: 1558835.3	
Drilling Contractor: WDC		Driller: B. Zamow		Date Started: 9/11/05 Date Finished: 9/14/05	
Drilling Equipment: Gus Pech GP24-400RS, Diedrich Sonic Head		Total Depth: (feet) 165.5		Water Depth: (feet) 22.5' / 17.11'	
Sampling Method: Core Barrel		Borehole Diameter: 6"		Well Diameter and Material: 2-inch PVC	
Drilling Method: Sonic, utilized 6" casing and a 4.5" core barrel		Screened Interval and Well Depth: 144.8-164.8 ft., bottom at 165.0 ft.			
Well Seal: Bentontite and Cement		Slot Size: 0.020"		Filter Material: #10-20 Silica Sand	
Logged By: C. Gardner		Development Method: Swabbed, bailed, pumped			

Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
	4350	SC	CLAYEY SAND (0-1.5 feet) Dry, loose, no odor. Predominately medium to fine sand with trace coarse sand to ~5 mm and ~20% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and low toughness, are brown, and have a weak reaction to HCl.					Descriptions of drilled cuttings based on ASTM Method D-2488 (the visual-manual procedure), grain-size determinations and nomenclature based on the Unified Soil Classification System. Munsell colors described wet.
		SC	CLAYEY SAND (1.5-8 feet) Dry to moist, medium dense, no odor. Predominately medium to fine sand with trace coarse sand to ~5 mm and ~20% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and low toughness, are brown, and have a weak reaction to HCl.					Horizontal survey data is expressed in the Nevada State Plane system, Nevada West zone, in feet.
5								Sharp contacts indicated by solid lines, gradational contacts indicated by dashed line.
	4345							All depths are below land surface unless stated otherwise.
								WELL DESIGN for B/W-9D: Screened Interval: 144.8-164.8 feet. Bottom of sump: 165 feet.
								Cement Grout: 0-132.2 feet. Bentonite Chips: 132.2-142.5 feet. Filter Pack: #60 Sand 142.5-143.5 feet, #10-20 Sand 143.5-165.5 feet.
		CL	SANDY LEAN CLAY (8-9.5 feet) Dry to moist, stiff, no odor. Predominately silt and clay with ~40% medium to fine sand to 1 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are grayish brown (10YR 5-2), and have a strong reaction to HCl.					Depth to Water Measuring Point is Top of PVC Casing.
		SM	SANDY LEAN CLAY (10.5-12 feet) Dry to moist, stiff, no odor.					Top of PVC Elevation: 4,353.84 feet, amsl. PVC Stick-up: 2.5 feet above land surface.

Project Name: Yerington Groundwater InvestigationWell Number: B/W-9Soil Boring ☐Monitoring Well ☒Project Number: 121243.021Sheet 2 of 13

Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
15	4340	CL	Predominately silt and clay with ~30% medium to fine sand to 1 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5-3), and have a weak to strong reaction to HCl. SANDY LEAN CLAY (10.5-12 feet) Dry to moist, stiff, no odor.					
		SM	Predominately silt and clay with ~30% medium to fine sand to 1 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5-3), and have a weak to strong reaction to HCl.					
		SC	SILTY SAND (12-14 feet) Dry, medium dense, no odor. Predominately medium to fine sand with ~5% coarse sand to 4 mm and ~15% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are light brown, and do not react to HCl.					
15	4335	SM	CLAYEY SAND (14-15 feet) Dry to moist, medium dense, no odor. Predominately fine sand (<0.5 mm) with ~35% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and low toughness, are brown, and do not react to HCl.					
		CL	SILTY SAND (15-15.5 feet) Moist, medium dense, no odor.					
		SM	Predominately medium to fine sand with trace fine gravel to 5 mm and ~20% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic and are light brown.					
		CL	SANDY LEAN CLAY (15.5-15.75 feet) Dry to moist, soft, no odor. Predominately silt and clay with ~40% medium to fine sand to 0.5 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 4-3), and do not react to HCl.					
20	4330	SM	SILTY SAND (15.75-16 feet) Moist, loose, no odor. Predominately medium to fine sand with trace fine gravel to 5 mm and ~20% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic and are light brown.					
		CL	SANDY LEAN CLAY (16-21.5 feet) Dry to moist, stiff, no odor. Predominately silt and clay with ~40% medium to fine sand (<0.5 mm). The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 4-3), and do not react to HCl.					
		SC	CLAYEY SAND (21.5-22 feet) Moist, medium dense, no odor. Predominately medium to fine sand with trace fine gravel to 10 mm and ~30% silt and clay. The sand and gravel are subangular to subrounded. The fines have medium plasticity and low toughness, are brown, and do not react to HCl.					
		SW-SM	WELL-GRADED SAND with SILT (22-22.5 feet) Moist, medium dense, no odor.					

Project Name: **Yerington Groundwater Investigation**Well Number: **B/W-9**Soil Boring ☐Monitoring Well ☒Project Number: **121243.021**Sheet **3** of **13**

Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
25	4325		Predominately medium to fine sand with trace coarse sand to ~5 mm and ~10% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
			POORLY-GRADED SAND with SILT (22.5-22.75 feet)					
			Moist, dense, no odor.					
			Predominately medium to fine sand to 1 mm with ~10% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
			WELL-GRADED SAND (22.75-25.5 feet)					
			Saturated, medium dense, no odor.					
			Predominately medium to fine sand with ~5% fine gravel to 12 mm and ~5% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic and are brown.					
		SP						
		SM	POORLY-GRADED SAND (25.5-25.75 feet)					
			Saturated, medium dense, no odor.					
30	4320	SP	Predominately fine sand (<0.5mm) with ~5% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		CL	SILTY SAND (25.75-26.25 feet)					
			Moist, dense, no odor.					
		SP-SM	Predominately fine sand (<0.5mm) with ~25% silt and clay. The sand is subangular to subrounded. The fines have low plasticity and toughness, are brown, and do not react to HCl.					
			POORLY-GRADED SAND (26.25-26.75 feet)					
			Saturated, dense, no odor.					
			Predominately fine sand (<0.5mm) with ~5% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		SW-SM	SANDY LEAN CLAY (26.75-27 feet)					
			Dry to moist, firm, no odor.					
			Predominately silt and clay with ~40% medium to fine sand (<0.5 mm). The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 4-3), and do not react to HCl.					
35	4320	CL	POORLY-GRADED SAND with SILT (27-28.25 feet)					
		SW-SM	Saturated, medium dense, no odor.					
			Predominately medium to fine sand to 2 mm with ~10% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
			WELL-GRADED SAND with SILT (28.25-29.5 feet)					
			Moist, dense, no odor.					
		CL	Predominately medium to fine sand with ~5% fine gravel to 8mm and ~10% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are grayish brown, and do not react to HCl.					
			SANDY LEAN CLAY (29.5-29.75 feet)					
			Dry to moist, firm, no odor.					
		SW	Predominately silt and clay with ~40% medium to fine sand to 0.5 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 4-3), and do not react to HCl.					
			WELL-GRADED SAND with SILT (29.75-31 feet)					
35	4320	SC	Predominately medium to fine sand with trace fine gravel to 6 mm and ~10% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are yellowish brown, and do not react to HCl.					
			SANDY LEAN CLAY (31-32.25 feet)					
			Dry to moist, stiff, no odor.					
			Predominately silt and clay with ~40% fine sand (<0.5mm). The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5-3), and do not react to HCl.					
		SW	WELL-GRADED SAND (32.25-33 feet)					
		CL	Saturated, medium dense, no odor.					
35	4320		Predominately medium to fine sand to 1 mm with ~5% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		SW-SM	CLAYEY SAND (33-34 feet)					

B/W-9 @ 26 - 31 Ft.

Project Name: Yerington Groundwater InvestigationWell Number: B/W-9Soil Boring ☐Monitoring Well ☒Project Number: 121243.021Sheet 4 of 13

Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
4315			Moist, stiff, no odor. Predominately medium to fine sand to 1 mm with ~45% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown, and do not react to HCl.					
		CL						
		SW	CLAYEY SAND (34-34.75 feet) Moist, medium dense, no odor. Predominately medium to fine sand with ~10% coarse sand to 4 mm and ~45% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown, and do not react to HCl.					
		SW	WELL-GRADED SAND (34.75-35 feet) Saturated, medium dense, no odor. Predominately medium to fine sand to 1 mm with ~5% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
			SANDY LEAN CLAY (35-35.5 feet) Moist, hard, no odor. Predominately silt and clay with ~40% medium to fine sand to 1 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 4-3), and do not react to HCl.					
40			WELL-GRADED SAND with SILT (35.5-36.75 feet) Saturated, medium dense, no odor. Predominately medium to fine sand with ~10% fine gravel to 10 mm and ~10% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
			SANDY LEAN CLAY (36.75-37 feet) Moist, stiff, no odor. Predominately silt and clay with ~35% medium to fine sand and ~5% coarse sand to 3 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are dark grayish brown (10YR 4-2), and do not react to HCl.					
			WELL-GRADED SAND (37-38.25 feet) Saturated, medium dense, no odor. Predominately medium to fine sand to 1 mm with ~5% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		CL	WELL-GRADED SAND (38.25-43 feet) Saturated, medium dense, no odor. Predominately coarse to medium sand with ~15% fine sand, ~5% fine gravel to 8 mm, and ~5% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
			SANDY LEAN CLAY (43-45.25 feet) Moist, stiff, no odor. Predominately silt and clay with ~35% medium to fine sand and ~5% coarse sand to 3 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are dark grayish brown (10YR 4-2), and do not react to HCl.					
		CL						
		CL						
45			SANDY LEAN CLAY (45.25-45.5 feet) Moist, hard, no odor. Predominately silt and clay with ~40% medium to fine sand to 2 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (7.5YR 5-4), and do not react to HCl.					
		SW-SM						
		CL	SANDY LEAN CLAY (45.5-46 feet) Moist, no odor. Predominately silt and clay with ~50% medium to fine sand to 2 mm. The sand is subangular to subrounded. The fines have medium plasticity and low toughness, are brown (10YR 5-3), and do not react to HCl.					
		CL	WELL-GRADED SAND with SILT (46-46.75 feet) Saturated, medium dense, no odor. Predominately coarse to medium sand with ~15% fine sand, ~10% fine gravel to 8 mm and ~15% silt and clay. The sand and gravel are subangular to subrounded. The fines are					

B/W-9 @ 38 - 43 Ft.

Project Name: Yerington Groundwater InvestigationWell Number: B/W-9Soil Boring ☐Monitoring Well ☒Project Number: 121243.021Sheet 5 of 13

Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
50	4300	CL	nonplastic, are brown, and do not react to HCl. SANDY LEAN CLAY (46.75-47.5 feet) Moist, firm, no odor. Predominately silt and clay with ~50% medium to fine sand to 2 mm. The sand is subangular to subrounded. The fines have medium plasticity and low toughness, are brown (10YR 4-3), and do not react to HCl.					
		CL	SANDY LEAN CLAY (47.5-49.5 feet) Moist, stiff, no odor. Predominately silt and clay with ~40% fine sand (<0.5mm). The fines have medium plasticity and low toughness, are brown (10YR 5-3), and do not react to HCl.					
			LEAN CLAY (49.5-51 feet) Dry to moist, hard, no odor. Predominately silt and clay with ~10% fine sand (<0.5mm). The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5-3), and do not react to HCl.					
			SANDY LEAN CLAY (51-54 feet) Dry to moist, firm to hard, no odor. Predominately silt and clay with ~30% fine sand (<0.5mm). The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5-3) to yellowish brown (10YR 5-4), and have a strong reaction to HCl.					
55		CL	LEAN CLAY (54-55 feet) Dry to moist, hard, no odor. Predominately silt and clay with ~10% fine sand (<0.5mm). The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5-3), and have a strong reaction to HCl.					
		CL	SANDY LEAN CLAY (55-56 feet) Moist, hard, no odor. Predominately silt and clay with ~35% medium to fine sand to 1.5 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are dark yellowish brown (10YR 4-4), and do not react to HCl.					
	4295	SM	SILTY SAND (56-57.5 feet) Saturated, medium dense, no odor. Predominately medium to fine sand with ~5% coarse sand to 3 mm and ~20% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		CL	SANDY LEAN CLAY (57.5-58.75 feet) Moist, hard, no odor. Predominately silt and clay with ~35% medium to fine sand to 1.5 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are dark yellowish brown (10YR 4-4), and do not react to HCl.					
		SC	CLAYEY SAND (58.75-59.5 feet) Moist, dense, no odor. Predominately medium to fine sand to 1 mm with ~30% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown, and do not react to HCl.					
60		SM	SILTY SAND (59.5-61 feet) Moist, medium dense, no odor. Predominately medium to fine sand to 1 mm with ~20% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
	4290	ML	SANDY SILT (61-61.75 feet) Moist, stiff, no odor. Predominately silt and clay with ~40% medium to fine sand to 2 mm. The sand is subangular to subrounded. The fines have low plasticity and toughness, are brown (10YR 5-3), and do not react to HCl.					
		SW	WELL-GRADED SAND (61.75-64 feet)					

Project Name: Yerington Groundwater InvestigationWell Number: B/W-9Soil Boring ☐Monitoring Well ☒Project Number: 121243.021Sheet 6 of 13

Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
			Saturated, medium dense, no odor. Predominately medium to fine sand with trace coarse sand to ~5 mm and ~5% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
65		SC	CLAYEY SAND (64-67.5 feet) Moist, dense, no odor. Predominately fine sand (<0.5mm) with ~40% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown, and have a weak reaction to HCl.					
	4285							
		CL	SANDY LEAN CLAY (67.5-70.75 feet) Dry to moist, hard, no odor. Predominately silt and clay with ~40% medium to fine sand and ~5% fine gravel to 8 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness and are brown (10YR 4-3).					
70								
		SW-SM	WELL-GRADED SAND with SILT (70.75-71.5 feet) Saturated, medium dense, no odor. Predominately medium to fine sand with trace fine gravel to 5 mm and ~10% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
	4280							
		CL	SANDY LEAN CLAY (71.5-78.5 feet) Dry to moist, hard, no odor. Predominately silt and clay with ~30% medium to fine sand to 1.5 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are grayish brown (10YR 5-2), and do not react to HCl.					
75								

B/W-9 @ 60 - 65 Ft.

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Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
4275								
		SW-SM	WELL-GRADED SAND with SILT (78.5-80 feet) Saturated, medium dense, no odor. Predominately medium to fine sand with ~5% coarse sand to 3 mm and ~10% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
80		SW	WELL-GRADED SAND (80-81.75 feet) Saturated, medium dense, no odor. Predominately medium to fine sand with trace fine gravel to 10 mm and ~5% silt and clay. The sand is subangular to subrounded, the gravel is angular to subangular. The fines are nonplastic, are brown, and do not react to HCl.					
4270		SM	SILTY SAND (81.75-83.75 feet) Saturated, dense, no odor. Predominately fine sand (<0.5mm) with ~15% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		SW-SM	WELL-GRADED SAND with SILT (83.75-84.5 feet) Saturated, medium dense, no odor. Predominately medium to fine sand with trace coarse sand to 3 mm and ~10% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are light brown, and have a weak to strong reaction to HCl.					
		SM	SILTY SAND (81.75-83.75 feet) Dry to moist, very dense, no odor. Predominately medium to fine sand to 0.5 mm with ~15% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and have a weak to strong reaction to HCl.					
85		SW	WELL-GRADED SAND (85-86.5 feet) Saturated, medium dense, no odor. Predominately coarse to medium sand to 4 mm and ~5% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
4265		CL	SANDY LEAN CLAY (86.5-87.5 feet) Dry to moist, hard, no odor. Predominately silt and clay with ~35% medium to fine sand to 1.5 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5-3), and have a strong reaction to HCl.					
		SW	WELL-GRADED SAND (87.5-88 feet) Saturated, medium dense, no odor.					
		CL						

B/W-9 @ 78 - 83 Ft.

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Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
90	4260	SM	Predominately coarse to medium sand to 4 mm and ~5% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl. SANDY LEAN CLAY (88-89 feet) Dry to moist, hard, no odor. Predominately silt and clay with ~30% medium to fine sand to 1 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 4-3), and do not react to HCl. SILTY SAND (89-90.75 feet) Saturated, medium dense, no odor. Predominately medium to fine sand to 1 mm with ~20% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		CL						
		SC	LEAN CLAY (90.75-91 feet) Dry to moist, firm, no odor. Predominately silt and clay with ~10% fine sand (<0.5mm). The fines have medium plasticity and toughness, are reddish brown (5YR 5-3), and have a strong reaction to HCl. CLAYEY SAND (91-93 feet) Moist, medium dense, no odor. Predominately medium to fine sand with ~10% coarse sand to 3 mm and ~25% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown, and have a strong reaction to HCl.					
		SC	CLAYEY SAND (93-94 feet) Moist, dense, no odor. Predominately medium to fine sand with ~10% coarse sand to 3 mm and ~25% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and low toughness, are brown, and have a weak reaction to HCl.					
95		CL	SANDY LEAN CLAY (94-96.75 feet) Dry to moist, hard, no odor. Predominately silt and clay with ~30% medium to fine sand to 1 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 4-3), and do not react to HCl.					
	4255							
		SC	CLAYEY SAND (96.75-98.5 feet) Dry to moist, dense, no odor. Predominately fine sand (<0.5mm) and ~30% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown, and do not react to HCl.					
		SM	SILTY SAND (98.5-100.5 feet) Moist, medium dense, no odor. Predominately fine sand (<0.5mm) with ~20% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
100								
		SM	SILTY SAND (100.5-101 feet) Moist to saturated, medium dense, no odor.					
	4250	SC	Predominately medium to fine sand with trace coarse sand to 3 mm and ~15% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not					

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Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
105	4245		react to HCl.					
		SC	CLAYEY SAND (101-102 feet) Dry to moist, dense, no odor. Predominately fine sand (<0.5mm) and ~20% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and low toughness, are brown, and do not react to HCl.					
		SC	CLAYEY SAND (102-104 feet) Moist, medium dense, no odor. Predominately fine sand (<0.5mm) and ~40% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and low toughness, are brown, and do not react to HCl.					
		SC	CLAYEY SAND (104-105 feet) Dry to moist, dense, no odor. Predominately fine sand (<0.5mm) and ~20% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and low toughness, are brown, and do not react to HCl.					
110	4240	SC	CLAYEY SAND (105-109.5 feet) Moist, medium dense, no odor. Predominately fine sand (<0.5mm) and ~40% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and low toughness, are brown, and do not react to HCl.					
		CL	LEAN CLAY (109.5-118 feet) Dry to moist, hard, no odor. Predominately silt and clay with ~10% fine sand (<0.5mm). The sand is subangular to subrounded. The fines have medium plasticity and high toughness, are brown (10YR 4-3) and dark gray (2.5Y 4-1), and have a strong to no reaction to HCl.					

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Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
115								
	4235							
		CL	SANDY LEAN CLAY (118-120 feet) Dry to moist, hard, no odor. Predominately silt and clay with ~40% medium to fine sand and ~5% coarse sand to 4 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 4-3), and do not react to HCl.					
120		SM	SILTY SAND (120-121 feet) Saturated, medium dense, no odor. Predominately medium to fine sand to 0.5 mm with ~20% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
	4230	SM	SILTY SAND (121-121.5 feet) Saturated, medium dense, no odor. Predominately medium to fine sand to 0.5 mm and ~15% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		SW						
		SM	WELL-GRADED SAND (121.5-122 feet) Saturated, medium dense, no odor. Predominately medium to fine sand with trace coarse sand to 3 mm and ~5% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
			SILTY SAND (122-127 feet) Saturated, medium dense, no odor. Predominately medium to fine sand to 0.5 mm and ~15% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
125								
	4225							
		CL	SANDY LEAN CLAY (127-132.5 feet) Dry to moist, hard, no odor. Predominately silt and clay with ~40% fine sand (<0.5mm).					

B/W-9 @ 121 - 126 Ft.

Project Name: Yerington Groundwater InvestigationWell Number: B/W-9Soil Boring ☐Monitoring Well ☒Project Number: 121243.021Sheet 11 of 13

Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
130	4220		The sand is subangular to subrounded. The fines have medium plasticity and low toughness, are dark gray (GLEY N4-1), and do not react to HCl.					
135	4215	SP	POORLY-GRADED SAND (132.5-135 feet) Saturated, dense, no odor. Predominately medium to fine sand to 1 mm with ~5% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		SC	CLAYEY SAND (135-139.25 feet) Moist, dense, no odor. Predominately fine sand (<0.5mm) and ~30% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and low toughness, are yellowish brown, and do not react to HCl.					
140		SP	POORLY-GRADED SAND (139.28-140 feet) Saturated, dense, no odor. Predominately medium to fine sand to 2 mm with ~5% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are reddish brown, and do not react to HCl.					
		SP-SM	POORLY-GRADED SAND with SILT (140-143.25 feet) Saturated, dense, no odor. Predominately medium to fine sand to 1 mm with ~10% silt					

Project Name: Yerington Groundwater InvestigationWell Number: B/W-9Soil Boring ☐Monitoring Well ☒Project Number: 121243.021Sheet 12 of 13

Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
	4210		and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		SC	CLAYEY SAND (143.25-145 feet) Moist, dense, no odor. Predominately fine sand (<0.5mm) and ~30% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and low toughness, are yellowish brown, and do not react to HCl.					
145		SP	POORLY-GRADED SAND (145-147.25 feet) Saturated, dense, no odor. Predominately medium to fine sand to 0.5 mm with ~5% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
	4205							
		SM	SILTY SAND (147.25-148 feet) Saturated, dense, no odor. Predominately fine sand (<0.5mm) with ~30% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		SP	POORLY-GRADED SAND (148-149 feet) Saturated, dense, no odor. Predominately medium to fine sand to 0.5 mm with ~5% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		CL	LEAN CLAY with SAND (149-149.5 feet) Dry to moist, hard, no odor.					
150		SP	Predominately silt and clay with ~20% fine sand (<0.5mm). The fines have medium plasticity and toughness, are brown (10YR 5-3), and do not react to HCl. POORLY-GRADED SAND (149.5-151.5 feet) Saturated, dense, no odor. Predominately medium to fine sand to 0.5 mm with ~5% silt and clay. The sand is subangular to subrounded. The fines are nonplastic and are brown.					
	4200							
		CL	SANDY LEAN CLAY (151.5-152 feet) Moist, stiff, no odor. Predominately silt and clay with ~40% fine sand (<0.5mm). The sand is subangular to subrounded. The fines have medium plasticity and toughness and are brown (10YR 4-3).					
		SM	SILTY SAND (152-153 feet) Saturated, medium dense, no odor. Predominately medium to fine sand to 1 mm with ~15% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		CL	SANDY LEAN CLAY (153-155.5 feet) Moist, stiff, no odor.					

BORING LOG

Well Number: **B/W-9**

Sheet 13 of 13

Depth (feet)	Elevation (feet)	USCS Group Symbol	Description	Sample No.	Graphic Log			Remarks
					Sample	Lithology	Well	
155			Predominately silt and clay with ~35% medium to fine sand to 1 mm. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown (10YR 5-3), and do not react to HCl.					
	4195	SM	SILTY SAND (155.5-156 feet) Moist to saturated, medium dense, no odor.					
		SM	Predominately medium to fine sand to 1.5 mm with ~20% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
			SILTY SAND (156-157 feet) Saturated, medium dense, no odor.					
		SW	Predominately medium to fine sand with ~10% coarse sand to 3 mm and ~20% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
			WELL-GRADED SAND (157-163 feet) Saturated, medium dense, no odor.					
			Predominately medium to fine sand with ~5% coarse sand to ~5 mm with ~5% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
160								
	4190							
		SM	SILTY SAND (163-164 feet) Moist to saturated, medium dense, no odor.					
			Predominately medium to fine sand to 2 mm with ~20% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, are brown, and do not react to HCl.					
		SC	CLAYEY SAND (164-165.5 feet) Moist, dense, no odor.					
			Predominately medium to fine sand to 1 mm and ~30% silt and clay. The sand is subangular to subrounded. The fines have medium plasticity and toughness, are brown, and do not react to HCl.					
165								

SONIC METHOD LOG YERINGTON.GPJ BRN&CALD.GDT 1/31/06